

and distribution; 2nd, The action of chemical re-agents on them; and 3rd, Their development. He mentioned their occurrence in *Aloysia citriodora*, where they exist in the form of a transparent circular membrane, with a central dark spot or nucleus; in various *Labiatae*, including species of *Thymus*, *Mentha*, *Ballota*, *Melissa*, *Lavandula*, *Marrubium*, *Leonurus*, *Teucrium*, *Sideritis*, *Hyssopus* and *Origanum*, in which they appear in the form of a transparent parent-cell, including a circular body about 1-600th of an inch in diameter, which is divided into four by a crucial septum, and in some cases subdivided further, so as to give twelve compartments—four in the centre and eight in the circumference, disposed in a circular manner.

The author next considered these bodies as they occur in the Lilac (*Syringa vulgaris*), *Tecoma australis*, *Myrica conifera* and *serrata*.

He stated that their contents are usually of an oily nature, being soluble in æther, but insoluble in water. They are developed in the same way as cells in general, the nucleus splitting into two cells, and each of these into two others, and so on. In all these bodies there are four primary compartments, which are often subdivided into eight, twelve, or more. This division into four resembles what takes place in pollen grains, and in the spores of many Cryptogamic plants, as *Lycopodium*, *Sphagnum*, and various algæ.

From the form and structure of these bodies, taken in connection with their contents, and the manner in which they can be detached and separated from the cuticle, the author concludes that they are of a glandular nature. The paper was illustrated by coloured etchings.

Mr. Sanderson called attention to some forms of abortive hairs, as represented by Raspail, and suggested that the bodies observed by Mr. Murchison might be of the same nature.

3. "On the mode of growth of *Oscillatoria* and allied genera," by John Ralfs, Esq., Penzance. (See p. 39 of the present Number.)

Professor Balfour was elected President for the ensuing year.

Professor Christison, Dr. Neill, Rev. Dr. Fleming, and Professor Goodsir, were elected Vice-Presidents.

William Brand, Esq., Treasurer, and Dr. Greville, Secretary.

#### ROYAL PHYSICAL SOCIETY OF EDINBURGH.

The monthly meeting of this Society took place in the Institution Rooms, 6 York Place, on the evening of Wednesday last, when Dr. Greville occupied the chair, and there was a full attendance of members and visitors. The first communication was from Mr. Hugh Miller regarding the *Asterolepis*, and other allied genera of fossil fishes from the Old Red Sandstone, illustrated by a beautiful set of specimens and casts, revealing the structure and œconomy of these ancient Ganoids, and the relation they bear to their congeners of the present day. Mr. Miller mentioned that several large specimens of the *Asterolepis* had been found in Russia by Professor Asmus, of the University of Dorpat, and in the north and west of Caithness by Mr. Robert Dick of Thurso. The Caithness specimens, he said, though not altogether so gigantic as those of Russia, were in a greatly finer

state of keeping, and furnished a better basis for the restoration of the animal. Its head was covered with strong dermal plates of bone, fretted on the exterior surface by the star-like tubercles to which the creature owed its name; its jaws were furnished by a thickly-set outer row of *fish* teeth, and an inner thinly-set row of huge *reptile* teeth; a single plate of vast size protected the under part of the head, filling up the arch-shaped space formed by the semicircular sweep of the lower jaw; its gill-covers, like those of the sturgeon, were composed each of a single plate;—like a contemporary fish of the same family, the *Glyptolepis*, it had a strong shoulder-bone (the analogue in fishes of the *os humerus* in quadrupeds and the human subject), and its body was covered with delicately fretted scales intermediate in their style of carving between those of the *Holoptychius* and *Glyptolepis*. The true skull of the animal was apparently a mere cartilaginous box, of which no fragment survives, but in the exterior cranial plates there might be traced what seemed to be analogues of the frontal-superior, frontal-anterior, and parietal bones. The eye orbits were placed, as in many of its contemporaries, immediately over the upper jaw; and, as in *Coccosteus*, *Diplopterus*, and *Osteolepis*, a small well-marked plate occupied the centre of the space between. The external lines of the frontal buckler did not always indicate lines of suture, but in some cases seemed purely ornamental; and the *reptile* teeth of the creature, as, in the absence of specimens establishing the point, had been shrewdly anticipated by Agassiz, indicated the true *Dendrodic* character. One very curious bone, which had its place probably over the shoulder, greatly resembled the dorsal spine of one of the huger Placoids of the Carboniferous system,—the *Gyracanthus*; it was similarly furrowed by diagonal groovings; but notwithstanding the resemblance, it was evidently not an ichthyodorulite, but lay flat on the body of the creature in the character of a plate. As shown by numerous coprolites found in the same bed with the remains of *Asterolepis*, and which, from their great size, could have belonged to none of its contemporaries, the animal had possessed, like existing sharks and rays, and some of the extinct Enaiosaurians, the spiral disposition of intestine; and the broken fragments of scales of *Dipterus*, palpably present in their convolutions, demonstrated, what might, indeed, be inferred from its formidable teeth, carnivorous habits. Mr. Miller stated that the bulk of some of the individuals of this genus must have been enormous; and he was the more desirous, he said, to draw attention to the fact, as he had mentioned in his little work on the Old Red Sandstone, founding on a large amount of negative evidence, that the fishes of the Lower Old Red Sandstone were characterized generally by a mediocrity of size. Single occipital plates found by Mr. Dick, in the neighbourhood of Thurso, measured sixteen and a half inches, and a corresponding plate, in the collection of Professor Asmus, at Dorpat, two feet across; whereas in the very massive specimen of *Holoptychius*, found by the Rev. Mr. Noble of St. Madoes, at Clashbennie, and now in the British Museum, the two plates by which this single plate of the *Asterolepis* is represented, measure only four and a half inches. Mr.



Miller acknowledged to the Society his great obligations to Mr. Dick, a singularly intelligent tradesman of Thurso, to whose geological labours, prosecuted in his leisure hours, Mr. Miller mainly owed his acquaintance with this gigantic Ganoid, and who had kindly made over to him the interesting fossils now before them, illustrative of its form and character.

At the conclusion of Mr. Miller's paper several members spoke of the interesting nature of his researches, and the desirableness of those engaged in the study of palæontology exerting themselves to have in Edinburgh a public collection of fossils, in which our city is so deficient. An interesting discussion also took place, principally bearing on the relation existing between the fossil fauna and flora of ancient epochs and those of the recent æra, when some interesting facts were stated by several members, which it is hoped will be brought forward at a future meeting.

Mr. R. Stark then exhibited to the meeting a few specimens of mosses recently received from North America, and lichens from the Falkland Islands. Among the former were fine specimens of *Bryum roseum*, a large and beautiful species, with mature fruit, *Neckera minor*, Pal. Beauv., and *Anomodon viticulosum*, B. Auct., which is confined to North America. These, and the other species shown, illustrated the modifications produced by the difference of climate and other influences on them, as well as plants of a higher order common to the European and American continent. The lichens from the Falkland Islands, brought home by Dr. J. Hooker, were mostly of species closely allied to or identical with those of Britain. One of the most interesting was a minute species—*Squamaria elegans*—which may be regarded as the most southerly plant known, being found alone on the bleak and desolate southern coast of Cockburn's Island, beyond which all traces of vegetation disappear. Mr. Stark concluded by a few remarks on the desirableness of more fully investigating the geographical range of these plants, with a view of illustrating other branches of natural history.

#### ZOOLOGICAL SOCIETY.

Feb. 22, 1848.—William Yarrell, Esq., Vice-President, in the Chair.

The following paper was read:—

#### 1. ON A NEW SPECIES OF CHIMPANZEE. BY PROFESSOR OWEN, F.R.S.

This communication contained a description of the skulls of adult and aged male and female Chimpanzees from the Gaboon river, west coast of Africa, much exceeding in size and specifically distinct from the previously known *Troglodytes niger*. The author proposed to call the new species *Troglodytes Savagei*, after Dr. Thos. S. Savage, by whom it had been discovered and its existence made known to Professor Owen, in a letter dated April 24th, 1847, and of which the following extract was read:—

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